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Agricultural Cooperation in the Americas

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Agricultural Cooperation in the Americas*

By Ernest S. Hediger

THE sudden disruption of long-established patterns in international trade with the outbreak of World War II has drastically changed the economic life of the American nations. For several decades these countries had relied on distant parts of the earth, especially Asia, for their supply of such vitally important products as rubber, tin, Manila fiber, quinine and other drugs, and vegetable oils, to mention only a few. While most of these products could have been developed in the Western Hemisphere, lower labor and production costs in the Far East, as well as the better technological orientation of that area, made it more advantageous to import them. One of the main purposes of the program sponsored by the Office of Foreign Agricultural Relations in Latin America is to help overcome these handicaps.

Since many of the products that needed to be replaced are agricultural, their increased development naturally fostered the growth of agricultural cooperation between the United States and the Latin American republics. During the past three years a number of agreements designed to introduce or expand production in the Americas of commodities formerly imported from the Far East have been concluded with Latin American authorities and corporations under the auspices of various United States agencies. Their implementation has woven a new fabric of inter-American cooperation which is daily increasing in scope and strength, and covers a range of activities from trade, industry, finance, and transportation to agriculture, sanitation, public health, and education. In all these fields North American government agents, businessmen and experts are collaborating with their colleagues of the other Americas in an unprecedented effort to expand the production and marketing of Latin American goods, an effort buttressed and made possible only by large-scale financial and technical help from the United States.

RUBBER: THE NUMBER ONE PROBLEM

Paramount among the raw materials needed by the Allies in their world-wide war effort is natural rubber, previously imported almost entirely from British Malaya and the Netherlands Indies. With the loss of these sources—except for smaller plantations in Ceylon and India—the tapping of the rubber resources of the Americas, birthplace of *Hevea brasiliensis,* the most profitable of all rubber-yielding plants,[1] became a wartime necessity.

The problem of developing American natural rubber resources was attacked from two angles: immediate tapping of existing mature wild trees, and long-term establishment of rubber plantations in favorable areas of the Western Hemisphere. The most important from the point of view of prosecution of the war is the exploitation of wild rubber. Since it takes from five to ten years for a rubber tree to bear, the creation of new plantations must be considered from the point of view of post-war reconstruction rather than that of meeting pressing needs.

Under these circumstances, it is natural that the bulk of the Allied effort should be applied to the exploitation of hitherto untouched wild rubber trees, of which millions exist in tropical America, rather than to the planning of new plantations. It is natural, too, that the United States, as the world's greatest peacetime consumer of rubber and the "arsenal of democracy" in this war, should be the nation most directly interested in developing the rubber resources of the Western Hemisphere.[2]

* This report examines only the most recent trends of inter-American collaboration in the field of agriculture, and is intended to complement information already given in previous Foreign Policy Reports: L. E. Frechtling, "Replacement of Strategic Materials Lost in Asia," June 15, 1942; D. H. Popper, "Hemisphere Solidarity in the War Crisis," May 15, 1942; J. C. deWilde, "Economic Projects for Hemisphere Development," March 1, 1942, and "Wartime Economic Cooperation in the Americas," February 15, 1942; and A. R. Elliott, "The Resources and Trade of Central America," September 1, 1941.

1. The principal varieties of commercially used rubber trees in America are Hevea, Castilla—often misspelled Castilloa—Manicoba and Mangabeira, to which a rubber-bearing shrub, Guayule, must be added.

2. Merely to buy the normal output of American wild rubber would not noticeably have helped the Allied war effort. Before World War II, Latin American rubber production was small and did not suffice to cover even the needs of the producing countries. The production of Brazil was about 18,000 tons a year; that of Mexico about 5,000 tons; Ecuador, 1,500 tons; Bolivia, 1,000 tons; and other countries, 500 tons or less. At the time, these countries consumed some 30,000 tons of rubber goods annually, about two-thirds of which were manufactured locally. E. S. Holt, "The Inter-American Rubber Agreements," *Arbitration in Action* (New York), April-May 1943, p. 17.

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Soon after Pearl Harbor the United States concluded agreements with fifteen Latin American countries to develop rubber production in tropical America under joint control.[3] The most important of these agreements, and also the first to be signed, was the one concluded by Brazil with the U.S. Rubber Development Corporation, a subsidiary of the Reconstruction Finance Corporation. Agreements were subsequently effected with fourteen other countries or colonies in the Americas,[4] according to which the U.S. Rubber Development Corporation pledges itself (1) to purchase all rubber offered by the contracting countries until December 31, 1946; (2) to stimulate development of rubber production in these countries by liberal term loans, technical assistance, and the provision of needed supplies and equipment; and (3) to ship in exchange a minimum amount, stipulated in each agreement, of rubber goods for the maintenance of transportation, industrial activity and health.

DEVELOPMENT OF THE AMAZON BASIN

Chief in importance among the various wild-rubber tapping projects undertaken in Latin America with the financial and technical aid of the United States is that of the Amazon Valley, for which a fund of $5,000,000, to be used in collaboration with Brazilian government agencies, has been set aside by the Rubber Reserve Company.[5]

At the beginning of this century, the Amazon region was the world's chief source of rubber, producing annually from 40,000 to 50,000 tons from wild trees. The present emergency program foresees a production of some 70,000 tons in 1944, when the work will be in full swing. This goal sets a tremendous task for, before the scattered trees can be tapped, trails must be cut in the jungle, and transportation, housing, food and sanitation provided for the workers needed in this huge, sparsely settled,[6] and malaria-infested territory. Under such circumstances, the opening of the Amazon Basin, involving the joint efforts and collaboration of the United States and five South American countries—Brazil, Bolivia, Colombia, Ecuador and Peru—represents one of man's greatest achievements.[7]

As was the case with the building of the Panama Canal, sanitation is the prime requisite for economic development, and to create bearable living conditions in these torrid, fever-ridden lands, a herculean task of sanitation and colonization must first be accomplished. This program is already well under way in the Amazon Basin. As a result of the combined efforts of the six above-mentioned American countries, all of which contributed funds, doctors, sanitary engineers, workers, and materials to the task, a territory of more than 2,000,000 square miles is gradually being opened to civilization. Beginning with the construction of a chain of medical centers from the mouth of the Amazon on the Atlantic deep into the lowland forests on the eastern slopes of the Bolivian, Peruvian, Ecuadorian and Colombian Andes, this program provides for the establishment of means of communication, including the building of a dozen airfields, the setting up of housing facilities, stores, etc., for the 100,000 rubber workers who, according to the United States-Brazilian agreements, are to be recruited in other parts of Brazil and settled in the Amazon Basin by 1944.

Execution of the Amazon health and sanitation program has been placed under the general direction of a United States citizen, Dr. George M. Saunders of the Washington Institute of Inter-American Affairs. Early in 1942 Dr. Saunders and his aides went to Brazil to establish contact with local and national health authorities and, since their arrival, the Amazon Health Mission has opened some twenty medical posts in strategically located places. Powerful air transports are now bringing doctors, supplies and medicines to previously inaccessible parts of the Amazon Basin, and locally constructed hospital launches ply up and down the great river and its tributaries, giving medical aid to the rubber workers and their families. It is expected that by the end of 1943 fifty infirmaries will be in operation in the Brazilian section of the Amazon territory alone.

The other countries of the Amazon Basin have concluded with the United States arrangements similar to that of Brazil, although narrower in scope. The government of Peru, on April 23, 1942, signed agreements for joint development of its resources of strategic materials essential for hemisphere security. Included in these arrangements was the establishment, with the help of a $1,125,000-fund made available by the U.S. Rubber Reserve Company, of a Peruvian-Amazon Corporation to develop the production and encourage the collection of wild rubber and other tropical products of

3. In May 1941, previous to these agreements, a contract under which all the exportable surplus of Brazilian rubber was earmarked for sale to the U. S. Reconstruction Finance Corporation was signed by Brazil and the United States.

4. Bolivia, Colombia, Costa Rica, Ecuador, Guatemala, British Guiana, Honduras, British Honduras, Mexico, Nicaragua, Panama, El Salvador, Trinidad and Venezuela.

5. For a brief study of the U.S.-Brazilian agreements of March 3, 1942 which also cover the rubber program, see D. H. Popper, "U.S. Brazilian Economic Accords," *Foreign Policy Reports*, March 1, 1942, p. 307.

6. For instance, the Brazilian state of Amazonas, three times as large as Texas, has a population of only 450,000 inhabitants, or about two per square mile, including cities.

7. Much of the factual information in this section is taken from "Battle of the Amazon," by John C. McClintock, *Foreign Commerce Weekly*, July 3, 1943, p. 3.

importance to the Allied war effort.[8] In Ecuador the National Development Corporation,[9] established in 1942 to foster the development of all possible sources of national wealth and financed through an Export-Import Bank loan of $5,000,000,[10] is studying, in cooperation with the U.S. Department of Agriculture, a scheme destined to stimulate greater collection of wild rubber by inhabitants of the country's rubber-producing areas. One of the features of the scheme is the establishment in these areas of trading posts stocked with foodstuffs, clothing and other articles available in Ecuador and supplemented by merchandise from the United States, which would serve as centers for the procurement of rubber.[11]

LONG-RANGE RUBBER DEVELOPMENT

The wild rubber-tree tapping program will probably be largely abandoned as soon as cheaper plantation rubber again becomes available. This does not mean, however, that the Western Hemisphere will once more lose its importance as a rubber producer. So much progress has been made in rubber-tree pathology, treatment and improvement that a commercially sound and profitable exploitation of selected, high-yield rubber-tree plantations in the American tropics appears possible after the war, even in the face of resumed Asiatic competition.[12]

Preparatory work for large-scale rehabilitation of American rubber plantations began on June 22, 1940, when the United States Congress approved a $500,000-appropriation. Immediately following this decision, the U.S. Department of Agriculture sent survey parties to investigate sites for rubber production and aid in establishing experimental rubber stations in Latin America. High-yielding seeds and clones imported from the East Indies were planted under its supervision in various parts of the Western Hemisphere. At the time of Japan's attack on Pearl Harbor, over ten million rubber-tree seeds had already been planted as part of this cooperative program, and a shipment of 5,500 budded rubber trees from the Philippines reached American shores soon afterward. Today, U.S. Department of Agriculture experts cooperate with the government agencies and private industry of most Latin American countries in order to increase the number of demonstration plantations, and small farmers all over tropical America are encouraged and helped to grow rubber.[13]

In Mexico the remnants of two old plantations of Hevea trees have again been put to work. Both are of great value as producers of seed for high-yielding plants, and one has a nursery in which over a million first-quality trees are being grown for future Mexican plantations. It is expected that these trees will give three to four times the quantity of latex produced by plants whose seeds have not been carefully selected. An agreement signed by the Mexican and United States Secretaries of Agriculture on July 14, 1943, during the Second Inter-American Conference on Agriculture,[14] provides for the establishment of five demonstration plantations of Hevea rubber of not less than 300 hectares each (about 750 acres). A joint committee from the two governments is to select the lands, and the plants will be supplied from present cooperative rubber production stations in tropical America. When the trees are fully mature, in some eight to ten years, they will produce from 800 to 1,200 pounds of latex annually per acre. Smaller quantities will be available after five to six years.

In Honduras a 500-acre nursery has been established in San Alejo, for which the U.S. Department of Agriculture furnished the seedlings as well as the services of specialists. In Guatemala twenty-five nurseries are being developed in connection with private haciendas, most of them plantations striving to free themselves from exclusive reliance on coffee. In Costa Rica the central experimental station,

8. *Bulletin of the Pan American Union* (Washington, D. C.), June 1942, p. 355.

9. One of the twenty-one national commissions set up in connection with the Inter-American Development Commission of Washington, D. C. This agency was constituted in November 1939 by the Inter-American Financial and Economic Advisory Committee created in September 1939 at the Panama Meeting of the Ministers of Foreign Affairs of the American Republics.

The central Inter-American Development Commission gradually organized affiliated development commissions, composed of 5 to 7 citizens prominent in financial, industrial and engineering circles. The first of these national groups to be established was the Brazilian Development Commission; the last—in January 1943—the United States Commission. For a detailed description of their aims and achievements, see "Descriptive Memorandum," Inter-American Development Commission, (Washington, D. C.), July 1, 1943 (mimeographed).

10. For a study of these loans, see "Export-Import Bank Loans to Latin America," *Foreign Policy Reports,* June 15, 1941.

11. For description of an earlier cooperative rubber development project, the Société Haïtiano-Américaine de Développement Agricole (SHADA) in Haiti, see deWilde, "Economic Projects for Hemisphere Development," cited; also *Bulletin of the Pan American Union,* February 1942, p. 66.

12. Dr. Earle N. Bressman, Director of the Inter-American Institute of Agricultural Sciences at Turrialba, Costa Rica, for instance, recently declared that, given the opportunity of cultivating high-yield and disease-resistant varieties, American planters could produce natural rubber for as little as 5 to 6 cents a pound and thus face any competition. Inter-American Development Commission, *Bulletin No. 57,* July 1943 (in Spanish). For a description of the U.S. Department of Agriculture's extensive long-term program for development of rubber plantations in the Western Hemisphere and the problems it raises for the post-war world, see deWilde, "Economic Projects for Hemisphere Development," cited, p. 300.

13. W. D. Rasmussen, "Agriculture in War," *Agriculture in the Americas* (U.S. Department of Agriculture, Washington, D. C.), June 1943, p. 104.

14. For a brief discussion of the proceedings of this conference, see R. H. Allee, "Agricultural America Mobilizes," *ibid.,* September 1942, p. 163.

working in cooperation with the Costa Rican Department of Agriculture, has achieved excellent results in its research on rubber-plant diseases. In Panama a central station working in cooperation with the experimental farm of the Canal Zone, at Summit, has been established, and a rubber-tree nursery located at Divisa and connected with the Panamanian Department of Agriculture produces good trees for local plantations. Moreover, one of the greatest rubber plantations of this hemisphere, established in 1935 by the Goodyear Tire and Rubber Company near Gatun, Panama,[15] has recently been acquired by the Inter-American Institute of Agricultural Sciences at Turrialba, Costa Rica. Ecuador has cooperative nurseries, and agreements have been concluded with the Ecuadorian Development Corporation for the establishment of a 2,000-acre productive plantation in Quevedo. Colombia and Peru also have nurseries which produce high-quality plants, and the Peruvian Department of Agriculture, as well as the Peruvian-Amazon Corporation, are cooperating with the Colombian Department of Agriculture and Agricultural Credit Bank in a joint rubber project.[16] Moreover, U.S. Department of Agriculture Cooperative Rubber-Plant Field Stations are in operation at Turrialba, Costa Rica; at Tela, Honduras; and at Marfranc, Haiti.

EL ORO REHABILITATION PROJECT

Another example of inter-American solidarity in the agricultural field is the joint rehabilitation project of the Ecuadorian province of El Oro, a region which suffers economically both from the loss of its banana and cacao markets as a result of the war and from devastation as a consequence of the frontier dispute with Peru.[17]

This rehabilitation has been entrusted to a government agency, the Ecuadorian Development Corporation, which works in close cooperation with the Inter-American Development Commission in Washington. At the request of the Ecuadorian authorities, the Office of the Coordinator of Inter-American Affairs has placed at the disposal of Ecuador a technical mission which helps local farmers develop new and more promising crops. The mission has already established a model farm in the neighborhood of Machala, the provincial capital, where soya beans, fodder grass, avocados, mangoes, and various fiber plants are now being tested for commercial production.[18] The Ecuadorian Development Corporation has also undertaken experimental cultivation of barbasco, the root of which is a source of the powerful insecticide rotenone.[19-21] American Indians are believed to have long known the properties of this plant, but only in recent years has modern agricultural science begun to investigate its value as an insecticide. Once its killing power was recognized, it soon became a leading product in the field, and in 1940 six million pounds of raw and pulverized rotenone were imported into the United States.

DEVELOPMENT OF NEW FIBERS

Second in importance among the inter-American agricultural development programs to which the war gave new impetus is the production of fibers. War industries and farms of the United Nations need great quantities of rope, cordage, cloth, and binder twine. In pre-war years these products were, for the most part, imported from the Philippines, the Netherlands East Indies and India. Here, as in other fields, the course of the war in Asia has drastically cut, or completely terminated, the flow of these goods to the Western Hemisphere.

Fortunately, there are many wild and cultivated fiber plants in the Americas which can replace the Asiatic fibers. Henequen and sisal, two closely related plants, whose fiber is the best substitute for Philippine abacá—better known as Manila hemp—are grown extensively in the Mexican peninsula of Yucatan and in some of the Caribbean islands; flax and linen thrive in Peru, Chile and Argentina; long-staple cotton in Peru; and so forth. Other, less familiar fibers, such as pita and cabuya, grow in Colombia, Peru and Ecuador. To assure rapid development of fiber plants in this hemisphere, official United States agencies, such as the Department of Agriculture and the Inter-American Development Commission, are assisting Latin American republics to increase by many thousands of tons the yearly output of American fibers.

The present fiber development program, which has been implemented and developed on the basis of recommendations adopted by the Rio de Janeiro meeting of the Ministers of Foreign Affairs,[22] includes the following projects: (1) cultivation in Panama, Honduras, Guatemala and Costa Rica of 40,000 acres of abacá (Manila hemp); (2) doubling the present henequen fiber production of Haiti; (3)

15. This plantation, covering 2,800 acres, is surpassed in size in America only by the Ford plantations in Brazil and the Goodyear plantation in Costa Rica.

16. Inter-American Development Commission, *Bulletin No. 24*, May 1943 (in Spanish).

17. El Oro was confirmed as part of Ecuador in the recent boundary settlement.

18. Inter-American Development Commission, *Bulletin No. 33*, June 1943 (in Spanish).

19-21. The Ecuadorian Development Corporation was able to secure 850 rotenone roots from Panama.

22. For a study of the proceedings and resolutions of this meeting, see D. H. Popper, "The Rio De Janeiro Conference of 1942," *Foreign Policy Reports*, April 15, 1942.

acquisition of all exportable surplus of henequen, flax and ixtle[23] produced in Mexico; (4) contracting with the principal producers of Cuban fibers for all the exportable surplus; (5) an agreement with Peru to buy the country's linen surplus and extend linen cultivation; and (6) experimentation with, and study of, the cultivation of other fibers, such as malva fiber in Cuba, cabuya in Ecuador, and roselle in Cuba and Central America. In the application of this general program, many thousands of acres of new fiber plantations have been prepared and seeded during 1943, promising a large increase in total American production in 1944.

Dominican Republic. Vast new henequen plantations have been laid out in this Caribbean republic, and a henequen-fiber bag factory has been built. It is expected that the new plantations will in time produce all the fiber needed by the Republic, and even some for export. Temporarily, however, henequen fiber must be imported from Haiti.

El Salvador. This Central American republic pioneered in the use of locally grown fiber for the manufacture of bags. As early as 1932 it established a henequen-fiber bag factory, which has been considerably enlarged since Pearl Harbor and is now operating at full capacity making bags for the coffee and other exports of Salvador, Guatemala, Honduras, Costa Rica and Panama. It utilizes about three-fourths of the 5,000,000 pounds of henequen fiber annually produced in El Salvador, and its product is a welcome substitute for the jute bags previously used throughout Central America.

In an effort to increase the flax trade between Chile and the United States, the Inter-American Development Commission of Washington is helping its national affiliate, the Chilean Development Commission, to prepare commercial specifications and standards for flax fibers, in consultation with United States experts in fiber grading.

As part of the inter-American program for production of strategic and critical materials inside the Western Hemisphere, small cooperative experimental plantings of roselle, a fibrous plant similar to the jute grown in India, have been established in seven of the republics of tropical America. This quick-growing fiber, which can be harvested ninety days after sowing, seems excellently adapted to the manufacture of burlap cloth and could, therefore, take the place of Asiatic jute.

Some years ago small-scale experiments of roselle cultivation were initiated in El Salvador with seed brought from Java. The seeds produced from the plant grown in America are now being used for experimental plantations in other countries of the hemisphere. The amount of manual labor involved in the cultivation of roselle is believed to be considerably less than that needed for the preparation of jute, which is important since labor is scarcer and more expensive in the Western Hemisphere than in the Far East. At present, studies are being undertaken by United States technicians to find a process for separating the fiber by simple and inexpensive mechanical or chemical means, which would further solve the labor problem.

23. A fiber extracted from the leaves of common agave plants.

DRUGS AND INSECTICIDES

Shortly before complete occupation of the Philippines by Japan, a U.S. Army officer and former director of the Philippines Forestry Service escaped from Mindanao in a Flying Fortress, taking along some 2,000,000 seeds of the cinchona tree, whose bark is the source of the invaluable quinine. On his arrival in the United States, over 100,000 seeds were immediately sown in hothouses and maintained under slow-growth while a search was made for land favorable for transplanting. The cinchona tree grows best in tropical lands located at an altitude of 4,000 to 6,000 feet above sea level, with a dry season lasting not more than one and a half months, and the American countries best approximating such conditions, it was found, were Costa Rica and Guatemala. Agreements between the United States and these countries for setting up cinchona plantations were rapidly concluded. In Costa Rica 10,000 acres are to be planted with cinchona trees and a United States mission of experts is already on the spot selecting localities.[24] In Guatemala the agreement signed with the responsible authorities provides for extension and modernization of the largest existing cinchona plantation in the Western world, located in the district of San Marcos.

Cinchona bark is also produced in other countries of America, although in small quantities. A variety of cinchona tree, known as *Josephiana,*[25] grows at altitudes of 10,000 feet in the highlands of the Andes, especially Bolivia, and as early as 1933 the U.S. Department of Agriculture was sending seeds of Philippine cinchona to Brazil and Mexico. The first cinchona seedlings planted by any United States government agency—and until now the major portion of these seedlings—were those planted under the complementary products program of the Office of Foreign Agricultural Relations. Nearly 50,000 seedlings have been sent to Peru, and about as many to Ecuador, for commercial plantations; while small amounts (about 10,000 seedlings) have

24. Inter-American Development Commission, *Bulletin No. 19,* April 1943 (in Spanish).

25. The commercial variety, which has a high alkaloid content, is known as *Ledgeriana.*

been sent to a number of other countries for experimental purposes.

Extension of war to the tropics has created a demand for considerable quantities of insecticides nonpoisonous to man. For example, according to a recent bulletin of the Inter-American Development Commission,[26] over a million pyrethrum "bombs" have been sent to Allied troops on the battlefronts of Africa, the Pacific, and elsewhere.[27]

One of the most effective insecticides is pyrethrum, which can be obtained from plants which grow, or can be made to grow, in the Americas. Pyrethrum is extracted from the daisy-like flower of the pyrethrum plant found in Brazil, Chile, Peru and Argentina. The Dalmatian coast was the world's main source of pyrethrum until Japan began to produce it on a grand scale some twenty years ago and rapidly became the principal supplier. Shortly before the outbreak of World War II Japanese production, in turn, was menaced by cultivations set up in British East Africa and now, to complement African production, United States agencies are actively helping to develop cultivation of the pyrethrum flower in various countries of America.

Another potent nonpoisonous insecticide, rotenone, is extracted from the roots of two tropical plants, derris and lonchocarpus, the former cultivated mainly in the Far Eastern tropics, the latter in the Amazonian territories of Brazil and Peru and in Venezuela. Before Pearl Harbor, about half of United States imports of rotenone roots came from Asia, the other half from South America. After Japanese occupation of southeast Asia, every effort was made to increase production in the Western Hemisphere of barbasco, cube and timbo, as the rotenone-bearing roots are variously called. Agreements to this end have recently been concluded between the United States and several Latin American countries, the most important of which provides for joint development of plantings in the Amazon Valley by the governments of Brazil and the United States. This program started in June 1942 with the arrival at the national *Instituto Agronómico do Norte* at Belem, Brazil, of a party of United States agricultural scientists, to survey wild rotenone resources of the valley.[28] The Instituto is establishing a 250-acre nursery which will distribute cuttings of rotenone plants to interested planters.[29]

In Peru the production of lonchocarpus, or barbasco, has been greatly increased in recent years, jumping from 12,000 kilograms (exports) in 1933 to 542,000 in 1938 and 1,544,000 in 1942. As of June 1, 1943 the country's plantations covered approximately 7,000 acres, and it is expected that some 4,000 acres of new plantings will be ready by the end of the year. Barbasco exports already represent a higher total monetary value than those of any other single product shipped from the Peruvian Amazon.[30] Before the war, Brazil exported annually between one and a half and two million pounds of roots and powder to the United States, and Venezuela about 100,000 pounds, but production was declining. Since it takes from two to three years before the plant can be harvested, the products of recent Western Hemisphere plantings of either derris or lonchocarpus—the former grown in part from cuttings sent by air from the U.S. Department of Agriculture station at Mayaguez, Puerto Rico, the latter from existing local plantations—will not reach U.S. insecticide manufacturers until 1944 at the earliest.

FORESTRY RESOURCES

While increasing the need for wood as a raw material, war developments have at the same time deprived the Allies of access to important sources of timber in Northern Europe, the Far East and the Pacific, compelling them to rely more heavily on the forestry resources of the Western Hemisphere. This fact, to which must be added the drain on Canadian and other North American forests caused by war needs, is focusing attention on the still practically intact forests of the Latin American nations.[31] Up to now, in spite of their great timber wealth, most of these countries were hampered by the high cost of felling and transportation, and

26. Inter-American Development Commission, *Bulletin No. 36*, June 1943 (in Spanish).

27. A new method of "bombarding" mosquitoes was recently evolved under the auspices of the U.S. Department of Agriculture. Pyrethrum is introduced into a highly volatile solvent which pulverizes the insecticides into a fog, and this is maintained under pressure in an iron container resembling a bomb. From this container it can be instantly released by pressure of a trigger, and the fog penetrates everywhere. A single "bomb" gives off enough shots to exterminate for fifty days all the mosquitoes in ten rooms ten feet high and one hundred feet square without injuring human beings or domestic animals. For the present, anti-mosquito "bombs" are earmarked for war, but it is to be expected that after hostilities cease they will be available for civilian use.

28. *Agriculture in the Americas*, July 1942, p. 138.

29. Both commercial derris (*Derris elliptica*) and plantation-grown lonchocarpus (*Lonchocarpus utilis*) are not grown from seed but propagated with stem cuttings from harvested plants, which makes it difficult to obtain propagating stock in large quantity except in areas where crops are already established on a plantation scale. For details on the characteristics of rotenone-bearing roots, see E. C. Higbee, "Rotenone Production in the Amazon Valley," *Foreign Commerce Weekly*, July 24, 1943, p. 8.

30. Dried barbasco roots, often called "vegetable gold" by local growers, are now quoted at 18 cents a pound f.o.b. in Iquitos (Upper Amazon). *Ibid.*, p. 9.

31. Latin America, with 63 per cent of the forest lands of the Continent, has produced thus far only some 5 per cent of the timber felled in the Western Hemisphere, while Canada and the United States, with 37 per cent of the forest lands, have produced 95 per cent.

contented themselves with exporting high-priced woods for fine cabinet work, dyewoods and tanning-yielding woods. Soft wood, as a rule, was felled only for local use.

The growing needs of war are rapidly changing this picture. With the recent large-scale development of many wood-consuming war plants, especially plywood factories, the United States and perhaps even Canada may soon find it difficult to supply their requirements—at least in the better grades of wood—and may have to draw more and more on the resources of the Central and South American forests. Before the hitherto almost untapped wealth of Latin American forests can be efficiently exploited, however, a comprehensive survey must be made.[32] In order to help the countries concerned make such a survey and develop timber production, a forestry mission was recently sent to Ecuador, and another to Central America, with funds provided by the Office of Inter-American Affairs and specialists furnished by the U.S. Forestry Service.

The mission to Ecuador will concentrate its efforts on development of balsa production. Methods for drying and testing are being investigated, and a study is being made of the insects which attack this wood. Other lumber resources are also being examined, and local woods are already used extensively, especially for the small 100-ton boats which have proved very satisfactory in coastal navigation.

The Central American mission's main task is to discover a lumber supply to fill the wartime needs of the United States. At the same time, it is to study the possibilities of using local hardwoods instead of iron and cement for bridges, piles, conduits and other works needed for the Pan American Highway. This mission has collected information on some fifty different types of local lumber, many of which showed outstanding qualities. In the mountains towering over the Pan American Highway south of San José, Costa Rica, for instance, it discovered a forest of oaks often reaching a height of eighty feet or more. Finally, the mission is studying the problem of supplying Costa Rica with the soft-wood cases needed for export of their vegetable produce.[33]

Mahogany is extensively used in war industries as a resistant veneer for plywood boards, a material which provides many parts of PT boats, large transport planes and bombers. Before Pearl Harbor, more than half the mahogany imported into the United States came from the Philippines. The disappearance of this source of supply after Japanese occupation of the islands focused attention on near-by Central America, Cuba and Haiti, and various agreements to increase exports of mahogany wood were concluded between interested agencies in the United States and Mexico, Guatemala, Honduras, Nicaragua, Peru and Brazil.[34] To facilitate exploitation of Central American mahogany, mechanical saws and other equipment are now being shipped from the United States.[35]

Balsa, the lightest wood in the world—twice as light as cork and much stronger—is needed in great quantities for the manufacture of war material. It is used in Britain mostly for the construction of the famous "Mosquito" bombers, and in the United States for the manufacture of life preservers, mine buoys and various other articles. Before the war, balsa wood was practically an Ecuadorian monopoly, with that country producing some 98 per cent of the world's total output. Balsa trees are found, however, in other tropical American countries. According to results of a recently completed survey, four million feet of balsa wood could be felled in Costa Rica by the end of 1943[36] and the present supply increased by systematic planting. A joint program for accelerated development of these resources and other Latin American products required for the war effort is now under way.

COOPERATIVE FOOD PROJECTS

Further examples of Latin American collaboration in the field of agriculture are projects for the supply of fresh food to the Panama Canal Zone. The war, with its need for greater defense of and stricter watch on Canal installations, has greatly increased the Canal Zone population and created new problems of food supply for the armed forces as well as the civilian workers engaged on construction projects in the Zone. As shipping shortages and other causes prevent large-scale importation of U.S. foodstuffs into Panama, a scheme to develop local production has been devised through joint study by the Republic of Panama and the Institute of Inter-American Affairs. An agreement recently arrived at

32. For a brief study of American forestry resources and their future, see C. L. Forsling, "The Future of the Forests," *Agriculture in the Americas*, January 1943, p. 13.

33. Inter-American Development Commission, *Bulletin No. 1*, February 1943; *ibid., No. 23*, April 1943 (in Spanish).

34. The agreement signed with Mexico provides for United States importation of more than 15,000,000 feet of mahogany in 1943, or twice as much as in the preceding year. Excellent mahogany grows in southeast Mexico, especially in the territory of Quintana Roo, the state of Yucatan, and on the Isthmus of Tehuantepec. From Brazil and Peru, over 6,000,000 feet of mahogany are expected to be available for export in 1943, compared with 2,000,000 feet in 1928, and large quantities are to be shipped from Guatemala, Honduras and Nicaragua.

35. In one case, a complete West Virginia sawmill was shipped to Nicaragua to expedite production.

36. Inter-American Development Commission, *Bulletin No. 44*, June 1943 (in Spanish). This same source indicates that a 1500-acre experimental plantation is being set up in Costa Rica by the International Balsa Corporation, under agreement with the Defense Supply Corporation and the Board of Economic Warfare.

provides that the latter will furnish the funds and equipment needed to develop production in the form of a cooperative food project.[37]

To complement Panamanian food production, moreover, the Office of the Coordinator for Inter-American Affairs has made plans for another cooperative farming program in Costa Rica. Financed by the Export-Import Bank of Washington, this plan provides for (1) easy agricultural credit loans to farmers' cooperatives by the Central Bank of Costa Rica, based on promises to buy given by the Institute of Inter-American Affairs, the agency charged with carrying out the plan on behalf of the United States government; (2) establishment by the Institute of storage warehouses near Costa Rican production centers; (3) technical aid from the United States, such as experts, seeds and tools; and (4) over-all agreements to buy all surplus food produced in Costa Rica for the Allied armed forces stationed in the Caribbean area. Conversely, the government of Costa Rica agrees to transport locally produced foodstuffs by rail to the nearest port at cost, and to remove all taxes or duties on the export of agricultural products. The 1942 harvest was the first under the plan, and important shipments of Costa Rican foodstuffs to the Canal Zone have been made regularly ever since.[38]

TECHNICAL COOPERATION

No program of agricultural development can be efficiently prepared without expert technical counsel and assistance. The Third Meeting of Foreign Ministers of the American Republics, held at Rio de Janeiro in January 1942, recognized this fact when it resolved to instruct the Inter-American Financial and Economic Advisory Committee to create, under the auspices of the Inter-American Development Commission, a permanent body of technical experts to study the natural resources of each country when so requested by its government. While a "permanent body of experts" has not yet been formally constituted, numerous instances of agricultural technical cooperation with Latin American countries—ranging from the sending of special missions to the building of complete experimental stations—have paved the way for such an all-inclusive body.

AGRICULTURAL MISSIONS

The number of technical missions, large and small, which have been sent by agencies of the United States government to Latin American countries to help develop natural resources is too large to permit complete listing. As might be expected, most missions are interested primarily in expansion of the output of strategic products. In addition to providing the groundwork for such immediate requirements, however, they are endeavoring to develop activities of permanent value to the Latin American republics.

At the request of the Brazilian Development Commission, a technical mission of seven United States experts was sent in March 1942 to study the industrial and commercial possibilities of vegetable fats and oil production in Brazil. Another mission of seven United States technicians is stationed in the interior in connection with the program of expansion of wild rubber-tree tapping. In Ecuador a group of six specialists has been surveying the agricultural situation with special inquiry into diversification of crops. A technician experienced in plant products used by the medicinal and pharmaceutical manufacturers has been sent to Peru, and is scheduled to do similar work in Bolivia and Ecuador. A U.S. Department of Agriculture mission of experts has visited several American republics to survey the problems of milk production and distribution, as well as processing methods and sanitation in connection with the dairy industry.[39]

In the rubber field, a Department of Agriculture specialist in plant pathology, who recently visited Mexico, Guatemala, Honduras, Costa Rica, Panama, Ecuador and Peru, expressed himself very optimistically about the future of American-grown rubber, basing his convictions on the progress achieved in combating diseases of the Hevea. A mission of four United States technicians was sent to Venezuela to survey soil and water conservation problems and submit recommendations. Other specialists were dispatched by the Department of Agriculture and the Board of Economic Warfare to investigate the development of rotenone-bearing crops in Brazil, Haiti, Colombia, Ecuador and Guatemala, the procurement and mechanical cracking of babassú nuts in Brazil, and the study of cinchona resources in Colombia. According to a recent statement from the Office of Inter-American Affairs, other missions have been assigned, on request, to Costa Rica, El Salvador, Guatemala, Haiti, Honduras, Nicaragua and Paraguay.[40]

COOPERATION WITH NATIONAL STATIONS

The complementary products program, although accelerated by the war, was first formulated in 1936, when Henry A. Wallace was Secretary of Agriculture, and was inaugurated by the Office of

37. *Inter-American Monthly* (Washington, D. C.), April 1943, p. 45.

38. *Bulletin of the Pan American Union*, May 1943, p. 299.

39. Inter-American Development Commission, *Bulletin No. 8* (not dated).

40. *Bulletin of the Pan American Union*, January 1943, p. 60.

Foreign Agricultural Relations in 1939, when funds were made available for the first time. When wartime conditions made large-scale expansion of production imperative in the Western Hemisphere, the establishment of experimental agricultural stations in conveniently located sites in various Latin American countries was speeded up.[41] By mutual consent between the United States, usually represented by its Department of Agriculture, and corresponding federal agencies of the American republics, various agreements for the cooperative establishment and operation of such stations have already been signed. According to these agreements, the United States furnishes agriculturists qualified to direct the program and head the agronomic, horticultural, and pest and disease-control activities. The Latin American republics supply agriculturists to work in cooperation with these experts, provide land, buildings, skilled and unskilled labor, and the general operating expenses of the production station.[42]

The first agricultural experimental station to be set up cooperatively is that of Tingo María, in Peru. On April 22, 1942 Peru and the United States signed an agreement under which the Peruvian government undertook to furnish all the land needed for establishment of the station, to build the necessary service and residence buildings, and to supply at least one Peruvian agriculturist to work with each expert sent by the U.S. Department of Agriculture. The United States pledged itself to provide scientists in specified fields, as well as scientific equipment not available in Peru, and various kinds of technical help. The land set aside for the buildings covers about 11 acres, in the middle of a rich and unusually diversified agricultural region. Foundations of the main building were completed late in 1942, and construction has been under way ever since. Among the projects started at Tingo María are three rubber nurseries, a cinchona plantation, and an experimental field for cultivation of derris cuttings received from Puerto Rico in connection with the rotenone development program.[43]

Another cooperative station is being established in El Salvador at San Andres, 20 miles north of San Salvador on the Pan American Highway, to which the government has allocated 595 acres of land. The U.S. Department of Agriculture has prepared plans for the station buildings, which will include an administration unit, barns, shops, staff residences, and buildings for a farm school for 80 boys, while El Salvador has already appropriated funds to carry its share of the program. The chief agricultural projects of the station at present are derris, roselle fiber and, at a higher altitude nearby, cinchona.

In Nicaragua a similar station will be located at El Recreo, where four experts of the U.S. Department of Agriculture are already at work. The buildings have been planned in collaboration with Nicaraguan authorities, and complete blueprints are being worked out. The staff will consist of five North Americans and a considerably larger number of Nicaraguans. The main projects concern rubber, abacá, derris and the processing of coconuts.[44]

INSTITUTE OF AGRICULTURAL SCIENCES

Outstanding among the new cooperative institutions is the Inter-American Institute of Agricultural Sciences, a school of advanced studies devoted to fundamental scientific research in agriculture. This Institute is a creation of the government of the United States and the Pan American Union, and its official seat is in Washington. Regulations provide for gradual construction of field offices and experimental stations, however, and in April 1942 the Pan American Union submitted to its state-members a report recommending establishment of a field office.[45] By October, nineteen of the twenty-one American Republics declared themselves in agreement with the proposal, and the Institute's first field office was set up at Turrialba, on the Atlantic side of Costa Rica. Lying among hills at an altitude of 1900 feet, it is excellently situated for its purpose.

The Institute's plan is to bring farm experts from all over the Americas to Turrialba, where they will be able to study under actual tropical conditions and ascertain at virtually all altitudes the effect of light, minerals, temperature, moisture, etc., on the growth and health of plants. It is planned to bring to Turrialba a number of outstanding experts, each of whom will teach groups of six or eight selected students from different countries. The initial expenses of organization, including construction of buildings and preliminary operations, will be met

41. Agricultural development is a slow process. Before new or improved cultivation methods can be introduced on a large scale, experience in the practical selection and reproduction of the best plant and animal life must be accumulated, and farmers carefully prepared for the task of commercial production. Such training and preparation are best obtained at production stations which, in agriculture, play the part of pilot plants in industry.

42. *Agriculture in the Americas,* May 1943, p. 85.

43. *Ibid.,* June 1943, p. 108; *Bulletin of the Pan American Union,* June 1942, p. 356.

44. *Agriculture in the Americas,* June 1943, p. 102; *Bulletin of the Pan American Union,* July 1942, p. 413.

45. Eleven countries (Bolivia, Brazil, Colombia, Costa Rica, the Dominican Republic, Ecuador, El Salvador, Honduras, Mexico, Nicaragua and Venezuela) offered sites for the field office.

out of a grant of $465,000 made available by the United States government through the Office of the Coordinator of Inter-American Affairs on request of the Pan American Union. The government of Costa Rica gave the Institute more than 1200 acres of fertile land,[46] and it has an option on another 1250 acres.

The cornerstone of the Turrialba Institute was laid by Vice President Henry A. Wallace on March 19, 1943, on the first lap of his inter-American tour. While a provisional building has since been erected and quarters for the use of personnel are being built, it will be difficult to make much headway in construction due to scarcity of material, especially cement and iron. Research work on vegetable production, breeding and processing has already begun, however, and by the middle of 1944 fifteen students should be doing work at graduate level.[47]

INTER-AMERICAN METEOROLOGICAL INSTITUTE

As a parallel to the Inter-American Institute of Agricultural Sciences, the opening in Colombia of an Inter-American Meteorological Institute was announced early in 1943. The Institute, located at Medellín, was organized under the auspices of the Office of the Coordinator of Inter-American Affairs, the U.S. Weather Bureau and the Defense Supplies Corporation, with the cooperation of the government of Colombia and various Colombian institutions.[48]

The new agency's functions are to help Latin American countries: in agriculture, by better forecasting and timing for crop planting; in air transportation, by increased safety in flying; and, in a general way, by preventing damages and calamities through flood forecasting, as well as by permitting better public health work in connection with weather forecasting. Classes are held in the buildings of the University of Antioquia, and instruction is given by an inter-American staff consisting of five Latin Americans (one each from Argentina, Brazil, Chile, Costa Rica and Guatemala), and eight North Americans (four technical instructors from the U.S. Weather Bureau and four linguists). For the time being, 200 students—chosen from among a thousand applicants, many of whom had already had meteorological experience with airlines or in the armed services of their countries—are registered at the Institute. The course lasts six months, and a limited number of high-ranking graduates will be offered opportunities for advanced study in a United States university and at the U.S. Weather Bureau.

46. *Bulletin of the Pan American Union*, December 1942, p. 703.

47. *Agriculture in the Americas*, February 1943, p. 37.

48. *Bulletin of the Pan American Union*, July 1943, p. 415.

LOOKING AHEAD

Present-day inter-American agricultural cooperation is developing along two main lines: (1) gradual, permanent development of Western Hemisphere agricultural resources which, under normal circumstances, could compete internationally or locally with similar commodities produced in the rest of the world, notably Asia; and (2) accelerated wartime exploitation in the Americas of agricultural commodities previously imported from low-cost colonial countries now occupied by the enemy. Imperative as this exploitation may be for strategic reasons, it is often contrary to sound economic principles and may have to be abandoned as soon as the war is over and cheaper sources are again available.[49]

As long as the war continues, the principal problem will be that of the greatest possible output of strategic materials and commodities, with cost a secondary factor. After the conflict, when sources now in the hands of the enemy will once more be accessible, the question will be one of price, and competition with goods produced under a low-wage colonial economy will again confront Latin America. The way in which this problem is solved in the post-war era will be of decisive importance in the development of inter-American economic collaboration. The nations of Latin America are slowly but inevitably acquiring a higher standard of living. When hostilities cease, they will not want to be pushed back to a semi-colonial status by uncontrolled international competition. Yet, in order to maintain the social advances made in the last decade, which they will certainly want to retain, they must secure decent compensation for the products of their soil, or else close the door to imports and develop their own industries to the greatest possible degree.

49. In some cases, however, the opening of hitherto inaccessible regions, the mastering of tropical diseases, and other advances due to wartime developments may permit continuation of present activities on a competitive basis after the war.

In the October 1 issue of FOREIGN POLICY REPORTS*:*

WHAT FUTURE FOR ITALY? *by C. Grove Haines*

Recent Export-Import Bank Loans to Latin America

By Ona K. D. Ringwood and E. S. Hediger

Since 1941 the activities of the Export-Import Bank—except for small disbursements to Chinese Government agencies—have been related almost exclusively to inter-American trade and development of the resources and industries of the Western Hemisphere. Besides fostering this transformation through the national development commissions, loans were granted for the improvement of road and rail transportation systems in order to facilitate delivery of strategic materials required by the United States. A smaller part of the credits has been devoted to the purchase in the United States of products essential to the economic life of the Latin American republics.

Among the Bank's more important commitments in 1942 are those relating to rehabilitation of the Victorias-Minas Railroad and the development of an important source of high-grade iron in Brazil; the creation of a small but strategically located steel plant in Mexico; and further advances in connection with the output of essential strategic metals and minerals in various Latin American countries.[1] From the time of its creation to the end of 1942, the Bank has authorized commitments aggregating some $1,100,000,000 ($264 million i 1942), of which about $300 million were subs quently cancelled either because the applican found they did not require the facilities, or a ranged to obtain the necessary credits from priva sources. Actual disbursements have amounted onl to $337 million, of which nearly $200 million ha already been repaid. Disbursements would hav been much greater if Latin American beneficiari had been able to receive from the United States a the goods and materials they wanted.

A novel feature of the Bank, inaugurated i 1942, is a service through which the Bank assume responsibility for the delivery of export goods t their destination within four months from the dat the goods are ready for shipment in the Unite States. This new service helps American exporter keep open their established trade channels in spit of wartime shipping difficulties.

The credits available to the Latin American gov ernments has been a military secret since 1942, an their amount therefore has not been made public The last available figures, reproduced below, are a of May 31, 1942. They should not be substantiall different, however, from those for 1943.

1. *Annual Report of the Export-Import Bank for 1942* (Washington, 1943, mimeographed).

EXPORT-IMPORT BANK LOANS RELATING TO LATIN AMERICA*

May 31, 1942

(*in thousands of dollars*)

	Total Commitments	*To May 31, 1942* Disbursed	Cancelled	Outstanding
Argentina	$ 61,120,000.00	$ 130,000.00	$ 45,000.00	$ 60,990,000.00
Bolivia	16,962,000.00	529,344.21	500.00	16,432,655.79
Brazil	103,609,529.14	40,299,067.78	31,555,443.81	67,310,461.36
Chile	29,467,329.54	9,450,217.84	1,912,849.88	20,242,111.70
Colombia	22,181,385.48	11,741,385.48	1,427,307.41	10,440,000.00
Costa Rica	6,374,607.29	1,874,607.29	274,607.29	4,500,000.00
Cuba	78,478,473.36	38,478,473.36	38,478,473.36	40,000,000.00
Dominican Republic	3,300,000.00	1,130,429.71	239,645.31	2,169,570.29
Ecuador	14,255,000.00	564,714.95	68,474.53	13,690,285.05
El Salvador	1,196,000.00	50,000.00	——	1,146,000.00
Haiti	13,250,000.00	5,480,000.00	90,000.00	7,770,000.00
Honduras	2,700,000.00	——	——	2,700,000.00
Mexico	37,149,291.20	11,069,192.79	1,093,406.98	26,082,528.37
Nicaragua	5,150,000.00	2,650,000.00	315,833.34	2,500,000.00
Panama	2,500,000.00	2,450,000.00	272,500.00	50,000.00
Paraguay	6,500,000.00	2,770,000.00	254,350.00	3,930,000.00
Peru	25,000,000.00	——	——	25,000,000.00
Puerto Rico	250,000.00	——	——	250,000.00
Uruguay	19,585,000.00	33,893.00	——	19,551,107.00
Venezuela	29,933,000.00	3,192,178.35	116,333.35	26,740,821.65
Special Credits earmarked for more than one country	182,000,000.00	17,566,000.07	4,339,264.50	164,433,999.93
TOTAL (20 countries)	$660,961,616.01	$149,459,504.33	$80,483,989.76	$515,929,541.14

*Inter-American Development Commission (Washington, D.C.), *Bulletin No. 10*, July 1942 (in Spanish). Not included in this tabulation are (1) undisclosed amounts of lend-lease aid to various Latin American countries for their defense under the Lend-Lease Act of March 11, 1941; (2) direct military appropriations by the United States Congress such as, for instance, the loans made to Central American states to assist them in building the Pan American Highway from Mexico to Panama.